CONSTRUCTION OF LOCKS AND KEYS.

INSTITUTION OF CIVIL ENGINEERS.

ON the 9th inst., a paper was read "On the Construction of Locks and Keys," by Mr. J. Chubb. The author commenced by stating, that the most ancient lock, of whose form and construction there was any certain knowledge, was the Egyptian, which had been in use for upwards of 4,000 years. The construction of this lock was minutely described, also that of the ancient "warded" and "letter" locks. The essential principle of the Egyptian lock was that of moveable pins, or studs, dropping into and securing the bolt, all of which must be raised to the proper height, by corresponding pins in the end of the key, before the bolt could be unfastened. This lock was the foundation upon which most of the ingenious inventions of late years had been based, differing only in the forms of the moveable obstructions to the bolt,—some of which acted vertically, others horizontally, some with a rotary motion, and many others in an endless variety of ways.

Calculations were gone into, to show the number of different combinations which might be made in Chubb's lock; and it appeared, that with an average sized key, having six steps, each capable of being reduced in height twenty times, the number of changes would be 86,400; that if the seventh step, which threw the bolt, was taken into account, the reduction of it only ten times would increase the number to 864,000. Further, that as the drill pins of the locks, and the pipes of the keys, might be made of three different sizes, the total number of changes would be 2,592,000. In keys of the smallest size, the total number would be 648,000, whilst in those of the largest size it would be increased to 7,776,000 changes.

In conclusion, it was stated, that the manufacture of locks and keys was principally carried on at Wolverhampton and the adjacent towns, Birmingham, and London.

On the 16th the discussion upon the paper occupied the whole evening, and the meeting expressed a strong conviction in favour of Chubb's lock.

OPENING WORKS OF ART IN '51.

THE remarks in THE BUILDER recommending to Government the completion of some buildings and monuments now in progress, are well worthy of their serious regard; but in addition to the acceleration of such works which are open only at fitful intervals to the public, allow me to suggest to the conservators of national property that our great public buildings—such as the whole range of the Houses of Parliament, the metropolitan cathedrals, the museums generally, Tower, palaces, gardens (Zoological and others), together with institutes of all kinds, should be unreservedly and gratuitously opened on this grand occasion, so that one glorious saturnalia of science might evidence to the world the advance of arts and the unthought wealth of this great country.

Of what use is the gem which glitters in the cabinet of the virtuoso, or the precious relic which sleeps in the drawer of the antiquary? None whatever. Yet in much the same condition have our great public repositories of art been buried up to this day, so far as the populace are concerned,—at least such portion of the denizens of our metropolis as could not pay 1s. 6d. for the tower, 6d. for St. Paul's and the Abbey, and so on *seriatim*. This is truly the disgrace of England, as well as the cause of ignorance amongst the multitude, coupled with a want of respect, if not of admiration, for the masterpieces of taste, whenever they are admitted to a view.

As you observe, on the first admission of John Bull's family to the gardens, some slight damages were done to shrubs and flowers—till acquaintance with their value taught even the "snob" to appreciate and respect beauty in nature: familiarization with beauty in art would follow as essentially, and the result be the same. No act of the excellent Prince to whom is due the origination of the coming National Exhibition, can more illustrate his fame, or more endear him to the country, than the study to which he has devoted his fine intellect, namely, to connect the name of England and the annals of his era with supereminence in art. The eulogium of an ancient historian (Quintus Curtius), on the character of Philip of Macedon, seems to me to be apposite to the merits of Prince Albert, in the instance of the approaching exhibition, and to have escaped notice, for in that early and rude age the consequences of an aggregation of arts and manufactures are there demonstrated. In the present epoch of philosophic research, and perfection in mechanism, what may not be anticipated! Let England, then, the mistress in arts, be the foremost in munificence: let her open her repositories of hoarded wonders to convince the stranger of her supremacy, and to assure her own native children of toil that the issues of their industry are existent and indestructible, although long concealed from the artificer.

QUONDAM.

AID TO INVENTORS.

YOUR correspondent, "An Inventor of Ways without Means," in pointing out that persons so situated are unable to protect their inventions by patents prior to exhibition in 1851, has, I think, somewhat exaggerated the difficulty. Doubtless some mode of securing the benefit of a successful invention, less expensive than a patent (at the present price), and more effective than registration, is highly desirable. Still, in this country there is no want of enterprising moneyed men ready to join in or to defray the entire expense of patent right for a share of the profit attendant on every really good and useful invention. The person most likely to do so is the employer of the inventor, supposing the invention to have reference to the particular manufacture in which both are interested.

The want of *means* more seriously affects those who have, or who imagine they have, the *ways*, when they require capital to assist them to complete models or machines for exhibition. To obviate this difficulty the Bolton Committee of the Great Industrial Exhibition, at a recent meeting, commenced a separate subscription, to provide a local fund, to be called "the Operative Fund," for the assistance of operatives and artizans in maturing and perfecting any inventions, manufactures, machines, models, or improvements, which they may with their own funds be unable to complete for the exhibition. Contributions, amounting to 50*l.*, were volunteered at the meeting by parties who had in every case previously subscribed to the general fund, and the committee have already had applications for aid.

The same committee have also resolved, "That the local commissioner and the honorary secretary be appointed a *committee of secrecy*, to receive communications relative to objects for exhibition, which they may be desired not to make public before the time of exhibition," to obviate the objection there is to communicate the information, as to objects likely to be exhibited, sought by the commissioners.

G. J. F.

BRITISH ARCHÆOLOGICAL ASSOCIATION.

AT a meeting on the 10th, Mr. Pettigrew, V.P., in the chair, exhibitions were made by Mr. Redfern; Mr. Edwards; Mr. Gould, F.S.A.; Mr. Milner, F.S.A. (of a drawing of the sculptures on the font of Kirkburn, near Driffield: the upper series relates to baptism and other Christian subjects, but the lower one appears to be an illustration of some ancient romance: Dr. Bell suggested that it related to the tale of Reynard the Fox); Messrs. Lawes (of some tiles found while excavating beneath their house, situate about 50 feet south of the Barber Surgeons' Hall, London; these may have belonged to the chapel of St. James, which formerly stood near the north end of this street); Mr. D. Falcke; and Mr. Charles Ainslie (of a large number of arms, consisting principally of daggers and arrow-heads, found in the Thames while digging the foundations of the Houses of Parliament).

Mr. Pettigrew produced a MSS. volume, containing a series of warrants with the sign manual of Charles II., and countersigned by the celebrated secretary, Samuel Pepys, directed to Captain Faseby, the commander of the king's yachts, *Cleaveland* and *Charles*, from the year 1673 to 1678.

Dr. Bell read a paper on the contents of a parchment roll, 31½ feet long by 12 inches broad, which, from a collation with the fragments published by Hearne (Oxon, 1719), he pronounced to be an entire MS. of Thomas Sprott's Chronicle (who lived about 1276), and probably unique: no perfect copy exists in the Cottonian or Harleian collections, nor is another known to those well versed in our ancient annals. Enlarged drawings of some of the illuminations were exhibited; and from the cross-legged figure of Brute, Dr. Bell proceeded to give some new views concerning this peculiar position of our monumental effigies, illustrating the subject by some curious legal customs observed of old in Germany. Mr. Planché, F.S.A., made some remarks showing the great importance and curiosity of this subject.

The meeting concluded by the reading of a report from Mr. Pretty, of Northampton, relating to the excavations now in progress at the Roman villa near Towcester, which was illustrated by a drawing of one of the pavements.

PRESERVATION OF OAK FENCING.

IN reply to the inquiry for the best method to preserve oak fencing from the weather,—I have had much experience, and have for years watched the effect of the atmosphere upon these wooden fences, and in all cases have found that the wood itself, without any paint or dressing whatsoever, is the most durable. With respect to oak fencing, we must all have witnessed and seen many instances of old grey park fences that had existed, with their beautiful old crops of lichen, from time immemorial, and conveying a feeling of warmth and verdure to the mind much more pleasurable than any painted fence whatsoever. I erected a fence of thin yellow deal feather-edge boards, six from the 3-inch deal, and when removed, after seventeen years, there was no appearance of decay at all: with respect to oak, which is of a gummy sap, it will often be found that, when put up new and tarred or painted, a fungus will vegetate through the dressing, and the interior of the wood be rapidly destroyed; but when undressed it seems that the weather desiccates the gum or sap, and leaves only the woody fibre, and I am firmly of opinion that an oak fence undressed is the most durable, even by years. I may add, that white rosin and tallow is a very good dressing for an oak fence: it must be applied hot, and laid smooth by a *brazier*, in the same way as boats' bottoms are dressed.—E. V. GARDNER.

Another correspondent advises the use of a paint made with strong varnish bottoms, coloured any shade. We agree with E. V. G.

ASPHALTED ROADS IN PARIS.

IN Paris, where the importance of good roads is universally appreciated, a new experiment has just been tried by the Perimont Seyssel Company: it is an improvement upon the system of Asphalte causeways. The discovery of which we speak, consists in the application in its cold state without melting it, of the Asphalte extracted from the mines of Seyssel. The system is simple. The Asphalte rock is broken roughly into pieces about the size of a walnut, then it is lightly dipped in mineral tar oil, which renders it glutinous. In this state it is carried to the spot: a workman spreads it, and piles it down: it is then ready for circulation, carriages pass over it, when it becomes instantly an elastic and soft pavement, resembling a thick piece of leather spread upon a hard soil.

La Patrie says, one of the sidings of the Champs Elysées, the right hand side one, has been paved after this process, and everybody has been able to appreciate its advantages, and the ease of traction over it: in fact, since it was laid down, the left side has been every day more and more abandoned. This part of the way, which was done more than six months ago, has kept remarkably well considering the great change of temperature; and, in spite of the increase of traffic over it, when compared to the left side, the cost of keeping it in repair has been considerably less. "The question now is (continues the journal we quote), whether these causeways can successfully re-

To learn about PDF Compression and OCR go to ThePaperlessOffice.org